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AUTHOR Bray, Marty

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ABSTRACT

In order to facilitate the professional development of its student teachers, North Carolina has initiated a grant program that offers a number of grant opportunities. This paper describes how one of these grants was used in a special education classroom. The classroom consisted of 14 students with a wide range of handicapping conditions. The project itself consisted of two themes. The first was the creation of online portfolios on the part of the student in the class. The second theme revolved around the student teacher and the lesson plans developed for this project. These plans helped the student teacher meet the technology proficiency requirements and the plans have also been disseminated on the World Wide Web in order to provide other student teachers with examples of ways they can meet their technology requirements. (Contains 10 references.) (Author/AEF)

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Integrating Technology into Teaching and Learning: The Creation of Student Portfolios and Online Lesson Plans In One Special Education Classroom.

Marty Bray
The University of North Carolina at Charlotte

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Abstract

In order to facilitate the professional development of its student teachers North Carolina has initiated a grant program that offers a number of grant opportunities. This presentation describes how one of these grants was used in a special education classroom. The classroom consisted of 14 students with a wide range of handicapping conditions. The project itself consisted of two themes. The first was the creation of online portfolios on the part of the student in the class. The second theme revolved around the student teacher and the lesson plans she developed for this project. These plans helped the student teach meet her technology proficiency requirements and have also been disseminated on the World Wide Web in order to provide other student teachers with examples of ways they can meet their technology requirements.

Introduction

Literacy can have many meanings and, as we know, technology is the latest "form" of literacy being recognized by society and educators. Today, higher standards of all forms of literacy are being expected of our students and our teachers. This "rising bar" has resulted not only in higher expectations but in more tests being administered and increased pressure on administrators, teachers, parents, and students. In addition to the challenge of raising literacy rates among the students in their classrooms, teachers are also being challenged to incorporate technology into the classroom. This is a challenge for a variety of reasons not the least of which are the lack of resources in the classroom, the demands of the increasingly rigorous testing schedule and a lack of good exemplars which teachers can model in their own classroom.

North Carolina has initiated several programs that seek to deal with the issue of the integration of technology in the classroom. One of these is the establishment of minimum technology competencies in which initially certified teachers must demonstrate mastery. In order to address the issue of literacy among students with handicaps and mastery of technology competencies among student teachers, a project was initiated in which students in one special education classroom would create online book reports. At the end of the project both the book reposts and the teacher's lesson plans would be converted to Web Pages for dissemination on the World Wide Web.

This purpose of this article is to describe the process used to generate the student book reports and the impact that this had on the student teacher involved with the project. It will begin with some background information about the grant program used to fund the project. Next, the classroom will be described not only in terms of the students but the

context of the school. The article will then look at the pedagogical theory that under girds the project especially the notion of collaborative planning and writing. The section that will follow will be a description of the project as it was originally conceived and issues which arose during the course of the project that forced the classroom teacher and authors to change some plans. The article will then spend some time discussing how the project unfolded and problems which it faced. Finally, the article will discuss next iteration of the project that is currently underway.

The USTEP Grant Program

Funding for the project came from a USTEP grant (University School Teacher Education Partnership). These grants are designed to facilitate the development of programs that have a positive impact on teacher preparation in cooperating schools that host one or more student teachers (Edelfelt, 1999). The program awards two different levels of grants. The larger grants are for reoccurring projects taking place over two or more years. The smaller "mini" grants are awarded for one year and are frequently no more than 1500 dollars. The grant for this particular project was used to buy the equipment used in the classroom and some supplies. The equipment purchased consisted primarily of a computer that allowed the student access to the Internet. As the name of the program implies, the USTEP program is designed to facilitate partnerships between universities and schools. This project was formulated during a session in which the author meet the cooperating teacher who was interested in procuring funding for equipment in her classroom in addition to looking for ways to improve the use of technology among her students. The author was primarily interested in finding a way to continue research in the area of collaborative writing, the subject of his dissertation

(Bray, 1997), and beginning a "library" or collection of lesson plans which could be used by students who needed to complete their technology passports (a requirement of the state of North Carolina). The reason for this second area of interest was that numerous students in the author's Introduction of Computers class (which focuses on basic technology skills) needed some ideas for completing the requirements for their advanced technology requirements. Based on these areas of interest between the classroom teacher and the author, a grant application was written and funded. In addition to a description of the plan presented in the grant application, which will be described later in this article, the classroom context followed by pedagogical theory behind the project will be discussed next.

The Classroom: Description and Context

The classroom, which was the focus of the project, is a K-2 resource room located in an elementary school in the southwestern part of North Carolina. At the time the classroom served 18 students with a wide variety of handicapping conditions including autism, visual impairment, and learning disabilities. While the students in the class have a variety of specific needs, all of the students required instruction in the areas of reading and writing literacy. At the time of the project the classroom hosted a student teacher who was in the final phases of her program at UNC-Charlotte.

The needs of the students in this specific classroom are not unique. Turnbull, Turnbull, Shank, & Leal (1995) report that many disabled students struggle with specific reading and writing literacy issues. Schumm, Vaughn, and Harris (1997) also note that the problems of literacy among students with disabilities present unique challenges to both the classroom and special education teachers.

Physically the classroom is very small for the instructional tasks that take place there. The classroom is arranged with several child-sized tables spread evenly about the room. These tables were used to facilitate highly individualized instruction among the students. The classroom is in a recently renovated section of the school and was originally supposed to have been much larger than it is. During construction it was discovered that additional space was needed and so a corner of the classroom was "cut out" leaving an "L" shaped footprint. The narrowest part of the room is closest to the door. As one enters the class two computers are located to the left. At the time of the project one of these was an Apple II. The other was a DOS based PC. As one continues to walk in the room a series of tape recorders, book stands, and manipulatives are located around the walls of the classroom. These are arranged in stations that the students work at independently. In the middle of the large part of the class are the tables where the students spend most of their instructional time. The students move between the tables depending on the activity that they are working on. In the back of the classroom are three filing cabinets as well as other instructional materials that the teacher uses for designing lessons. Around the walls of the room are many posters and other information such as class rules, etc.

The students are not in the room during the entire instructional day. Rather, they are "pulled out" of other classrooms. In addition to the teacher and student teacher a teacher's assistant was also available. The number of adults in the room created a good student to teacher ratio. However given the size of the room, movement about the room was a bit difficult for the adults and those student with mobility difficulties.

Unfortunately this is a situation that is all too common in many US special education classrooms.

The school itself qualified as a low socioeconomic school and serves between 300 and 400 students close to a large metropolitan area of the state. During the previous academic year the school had come within one point of meeting its North Carolina state accountability scores. The students at the school represent a wide variety of socio-economic backgrounds as well as skill and abilities. As mentioned previously, the school also serves a larger community, that of teaching professionals, by being one of two schools in the school system that partner with UNC-Charlotte by hosting student teachers. As in other schools across North Carolina, the faculty of the school faced and continues to face a variety of challenges meeting the educational needs of all of the students who attend the school. Among these challenges are addressing the literacy skills of the students with disabilities who attend the school. An additional challenge for the school is that of providing a variety of meaningful teaching opportunities for the student teachers who train there.

Pedagogical Theory: Collaborative Writing and Planning

As mentioned previously the students served in the subject classroom all had low literacy skills for their grade level. One potential solution to the issue of low literacy was the use of specific teaching techniques that utilize software programs designed to increase reading literacy. The use of software to improve reading literacy has been the subject of numerous studies including those by Anderson-Inman and Horney (1998). In these studies the students were presented with reading literacy software that utilized a variety

of techniques including audio prompting and frequent corrective feedback. Many of these studies have indicated huge advances in reading literacy (Gretes and Green, 1998).

Writing literacy has also been the subject of much study specifically the use of the word processor to help students write more effectively for many years (Marland, 1971). Today, features such as laser printers and spell checking make word processing a powerful tool not only for the disabled student but anyone else who has to encode information. The World Wide Web has taken this notion of easy dissemination one step further by allowing anyone with Internet access and a web account to publish information to the entire world. Many researchers such as Bonk and Reynolds (1997) note that the power of this new means of disseminating information is not just in ease of publication but in the authors ability to link disparate pieces of information.

In the context of these developments the field of writing and rhetoric has been seeing several paradigm shifts as well. The most basic of these is a shift of the notion of teaching writing in terms of mechanics to the notion of teaching writing in terms of collaboration (Flower, 1994). A refinement of the collaborative writing process known as collaborative planning (Flower, Wallace, Norris, & Burnett, 1994) is well suited to the process of creating online documents especially when classroom resources are limited (Bray, 1997).

The collaborative planning process begins with the students either working alone or together to create a rough draft of their document. In this process the teacher prompts the students to think about issues such as audience (Flower, 1994). After the generation of a rough draft the other students and the teacher provide the student feedback about their work. This feed back is then used to make revisions. The author used this

technique with a group of academically gifted students to help them generate their own student websites (Bray, 1997) and the process not only proved helpful with the documents but in terms of the students ability to design navigation interfaces.

In addition to work with academically gifted students researchers such as Schumm, Vaughn, and Harris (1997) have worked with techniques such as electronic portfolios to help students with disabilities improve their writing literacy. This work by a variety of researchers is the instructional context in which the idea for the classroom activities would take place.

The Project: The Original Conception

The project revolved around three themes. The first dealt with providing the students in the target classroom with tools that will help improve their reading comprehension skills. The classroom teacher had identified a number of computer-based programs that could assist her in meeting these needs.

A second identified need was to improve the students' writing skills. As indicated in the previous section current research indicates that the composition of electronic portfolios and collaborative writing process might be useful in this particular case. Obviously, as will be discussed later, some modifications would be needed to facilitate the creation of the portfolios.

The third theme which guided the project plan was that of providing the student teacher in the classroom with opportunities to learn how to infuse technology into her teaching and so help her meet the requirements for her technology portfolio. To meet these needs three objectives were identified which she would incorporate into her lesson

plans. Not surprisingly, these objectives mirrored the plan for the project and they were as follows:

1. Increase the students reading literacy by providing them with appropriate computer software.
2. Improve the students' writing literacy by having them engage in a collaborative writing activity that will result in electronic "book reports."
3. Improve the student teacher's teaching/technology integration skills by involving her in the implementation of the project in the classroom.

To meet these objectives three major activities were to take place in the classroom. The first is the addition of software programs and a computer to support them in the classroom. Once the computer and software was identified and installed the students in the classroom were to use the software to "read" a series of books online. The identified software was selected so as to help the students improve their reading skills by providing them with multi-sensory experiences while they are reading online. Students will spend a predetermined amount of time working alone and in groups interacting with the software programs.

Concurrent with this activity the students were to begin the process of creating an "electronic" book report using a series of collaborative writing activities and age appropriate software. These collaborative writing activities were designed to involve the students working in small groups to develop a storyboard of their book reports on paper and then transferring these book reports to the computer using an age appropriate software authoring tool. Depending on the capabilities of the authoring software these book reports could potentially be posted on the World Wide Web.

The student teacher assisted the classroom teacher and UNC-Charlotte faculty member in identifying and implementing the first two activities. Her role in the implementation of these activities was structured in such a way as to demonstrate the

appropriate instructional uses of technology in the classroom that is a major component of technology portfolio requirements.

The Project: Realities and Lessons

Overall the goals of the project were meet with the exception of using software to facilitate the reading process. This was the result of several delays in getting the necessary computer technology into the classroom in a timely manner. At the time of writing a second project is underway similar to this one and similar problems keep arising in terms of getting computer software and or hardware into the classroom in less than one academic year. In both instances the major part of the delays has been due to the amount of time it has taken to route monies and received approvals from all of the stakeholders.

In order to work around the lack of technology in the classroom it was agreed that the student teacher would use a textbook already available in the classroom. The book was developmentally appropriate for the students with whom she would be working. Each student had a copy of the book and the student teacher read aloud to the students. After the read-aloud sessions the student teacher then had the students type their stories into the existing dos-based computer in the classroom. While this was being done the students were also asked to create original artwork to accompany their stories.

At this point the deadline for having the project come to an end was rapidly approaching so another modification to the original plan was made and this was to forego student revisions of their stories. After the students finished their stories and artwork the faculty member working on the project stopped by to help the teacher scan the artwork using a scanner available at the school. Once this was accomplished the students' stories and artwork were then transferred to a website where the students and their parents could

view the artwork. The teacher also gave the faculty member copies of her lessons plans which were also posted on a separate website.

Lessons Learned and Conclusions

The results of the project have at times seemed mixed. The students' work as well as the student teacher's lesson plans were posted to a website. Unfortunately due to the short time left in the project the students were not able to engage in the revision process to a meaningful extent. In order to deal with these shortcomings the next iteration of the project that is underway at the time of this writing will just focus on the writing process. Also, two new computers have been added to the classroom that should facilitate the next iteration of the project. In addition to scaling back the scope of the project to allow more time for the revision process the investigator also plans to have the students engage in the web authoring process in a more meaningful way by having the student actually scanning the images themselves and saving the images into a web friendly format.

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	Dr. Marty Bray	
Organization/Address: Department of Educational Administration Research and Technology University of North Carolina: Charlotte	Telephone: 704-547-3018	Fax: 704-547-3493
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